

coupling the RF modulated video signals and the unmodulated digital signals received at each said [output] signal port to each other [output] signal port[;], without port-to-port signal isolation; and

connecting each appliance to its associated coaxial cable through an associated one of a plurality of signal frequency filters, including a digital signal frequency filter having a frequency bandpass suitable to pass therethrough the unmodulated digital signals at a selected signal bit speed, and including an RF modulated video signal filter having a frequency bandpass suitable to pass therethrough the RF modulated broadcast television signals and the RF modulated video signals, each said filter being connected at a first terminal thereof to the associated appliance and connected at a second terminal thereof to the associated coaxial cable, each said providing a substantially equal filter characteristic impedance to bandpass signals propagating bi-directionally therethrough between the associated appliance and the coaxial cable. --

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--37 (Amended) The method for distributing radio frequency (RF) modulated broadcast television signals from a broadcast signal source to networked appliances connected to the source through a plurality of single conductor coaxial cables, while simultaneously distributing signals exchanged between the networked appliances over the same coaxial cables, the exchanged signals including RF modulated video signals from RF modulated video signal appliances and unmodulated digital from digital signal appliances, the coaxial cable having a cable characteristic impedance, the method comprising:

installing a device for bi-directionally transmitting and receiving RF modulated signals on a plurality of interconnected coaxial cables, which comprises a multi-drop signal distribution apparatus having a source input for receiving the RF modulated broadcast television signals from the broadcast source and having a plurality of [output]

signal ports, each [output] signal port receiving the RF modulated video signals and unmodulated digital signals from an associated one of the plurality of coaxial cables;

coupling the RF broadcast signals within said signal distribution apparatus, from said source input to each said [output] signal port;

coupling the RF modulated video signals and the unmodulated digital signals received at each said [output] signal port to each other [output] signal port[,], without port-to-port signal isolation;

connecting each appliance to its associated coaxial cable through one of a plurality of signal frequency filters, each said filter being connected at a first terminal thereof to the associated appliance and connected at a second terminal thereof to the associated coaxial cable, said plurality of signal filters including digital signal frequency filters having a frequency bandpass substantially from zero hertz to 2.5 Megahertz, suitable to pass therethrough unmodulated digital signals between a digital signal appliance and the coaxial, said plurality of signal filters further including RF modulated video signal filters having a frequency bandpass greater than five megahertz, suitable to pass therethrough the RF modulated broadcast television signals and the RF modulated video signals between an RF modulated video signal appliance and the coaxial cable, each said providing a substantially equal filter characteristic impedance to bandpass signals propagating bi-directionally therethrough between the associated appliance and the coaxial cable; and

inserting an impedance matching network between the signal input and output (I/O) ports of each digital signal appliance and said first terminal of said associated digital signal frequency filter, said impedance matching network providing a terminating impedance value at said first terminal which approximates the cable characteristic impedance provided to said second terminal, thereby providing said bi-directional exchange of unmodulated digital

signals at a minimum signal bit speed of substantially with minimum digital signal interference of the RF modulated video signals.--

--38. (Amended) Apparatus for distributing radio frequency (RF) modulated broadcast television signals from a broadcast signal source to networked appliances connected to the source through a plurality of single conductor coaxial cables and, concurrently and alternately therewith, distributing signals exchanged between the networked appliances over the same coaxial cables, the exchanged signals including RF modulated video signals from RF modulated video signal appliances and unmodulated digital from digital signal appliances, the coaxial cable having a cable characteristic impedance, the apparatus comprising:

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a device for bi-directionally transmitting and receiving RF modulated signals on a plurality of interconnected coaxial cables, which comprises a multi-drop signal distribution apparatus, having a source input adapted for receiving the RF modulated broadcast television signals from the broadcast source and having a plurality of [output] signal ports, each adapted for receiving the RF modulated video signals and unmodulated digital signals from an associated one of the plurality of coaxial cables, to be associated therewith, said signal distribution apparatus coupling the RF broadcast television signals from said source input to each said [output] signal port and coupling the RF modulated video signals and the unmodulated digital signals received at each said [output] signal port to each other [output] signal port;

a plurality of digital signal frequency filters, each adapted for connection at a first terminal thereof to the signal input and output (I/O) of a related one of the digital signal appliances and adapted at a second terminal thereof for connection to the networked appliance associated coaxial cable, each said digital signal frequency filter having a

frequency bandpass suitable to pass unmodulated digital signals therethrough at a selected signal bit speed between the digital signal appliance and the coaxial cable; and

a plurality of RF modulated video signal frequency filters, each adapted for connection at a first terminal thereof to the signal (I/O) of a related one of the RF modulated video signal appliances and adapted at a second terminal thereof for connection to the networked appliance associated coaxial cable, each said RF modulated video signal filter having a frequency bandpass suitable to pass the RF modulated broadcast television signals and the RF modulated video signals bi-directionally therethrough between the associated appliance and the coaxial cable--

49. (Amended) Apparatus, for distributing radio frequency (RF) modulated broadcast television signals from a broadcast signal source to networked appliances distributed in selected locations and connected to the source through associated ones of a plurality of single conductor coaxial cables, and for also distributing, concurrently and alternately therewith in response to infrared (IR) command signals received from IR signal sources controlled by an operator, signals exchanged between the networked appliances over the same coaxial cables, the exchanged signals including RF modulated video signals from RF modulated video signal appliances, unmodulated digital from digital signal appliances, and the received IR command signals, the different type appliances and the source of IR command signals each having different operating signal frequency ranges, the coaxial cable having a cable characteristic impedance, the apparatus comprising:

a plurality of IR transceivers, at least one located in line-of-sight proximity to the networked appliances in each selected area, each said IR transceiver responsive to IR command signals received through the air from IR signal sources in the area for providing an equivalent electrical command signal thereof, and each transmitting IR command signals

through the air to appliances in the area in response to equivalent electrical command signals received thereby;

a plurality interface apparatus, one each associated with one or more appliances and IR transceivers within a selected area, said interface apparatus having a digital signal frequency filter, an electrical command signal frequency filter, and an RF modulated video signal frequency filter, each having a different bandpass frequency which encompass the different operating signal frequency ranges of the unmodulated digital signals, the electrical command signals, and the RF modulated television signals and video signals, respectively; said digital signal frequency filter being interconnected at first and second terminals thereof between the signal input and output (I/O) ports of a digital signal appliance and the coaxial cable, said electrical command signal frequency filter being interconnected at first and second terminals thereof between an IR transceiver and the coaxial cable, and said RF modulated video signal frequency filter being interconnected at first and second terminals thereof between the signal I/O ports of an RF modulated video signal appliance and the coaxial cable, wherein each said frequency filter bi-directionally couples operating signals within their respective bandpass frequencies between the associated appliance and the coaxial cable; and

a device for bi-directionally transmitting and receiving RF modulated signals on a plurality of interconnected coaxial cables, which comprises a signal distribution unit, having a source input for receiving the RF modulated broadcast television signals, and having a plurality of [output] signal ports for receiving the unmodulated digital signals, the electrical command signals, and the RF modulated video signals provided through an associated one of the coaxial cables from each of said interface apparatus, said signal distribution unit coupling the RF broadcast television signals from said source input to each said [output] signal port and coupling the unmodulated digital signals, the electrical command signals, and the RF

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modulated video signals received at each said [output] signal port to each other said [output] signal port--

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--61. An apparatus for bidirectionally transmitting and receiving RF modulated signals on a plurality of interconnected coaxial cables, the apparatus comprising a multi-drop signal distribution device, which comprises:

1) a source input for receiving RF modulated signals from a broadcast source;

and

2) a plurality of signal ports, each port adapted for receiving a plurality of modulated signals, including at least said RF modulated signals, for receiving digital signals from associated ones of a plurality of coaxial cables connectable to each of said signal ports, and connected to couple the RF modulated signals from said source input to each signal port and coupling the RF modulated signals from said source input to each of said signal ports, and coupling the RF modulated signals and the unmodulated digital signals received at each said signal port to each other signal port.

62. An apparatus as in claim 61, further comprising:

first circuit elements coupling RF broadcast modulated signals to be received at said source input to each one of said plurality of signal ports; and

second circuit elements coupling RF modulated signals at each signal port and any digital signals to be received at each signal port to each other signal port of said plurality of signal ports.

63. An apparatus as in claim 61 further comprising:

an amplifier connected to said source input for alternating signals received at said source input, and adapted for attenuating lower frequency signals received at said source

input by a greater amount than the attenuating of higher frequency signals received at said source input; and

a plurality of high pass filters connected for receiving said signals from said amplifier, corresponding respectively to said plurality of signal ports, and adapted for providing low impedance coupling of said RF modulated signals to each one of said plurality of signal ports.

64. An apparatus as in claim 62 further comprising:

an amplifier connected to said source input for alternating signals received at said source input, and adapted for attenuating lower frequency signals received at said source input by a greater amount than the attenuating higher frequency signals received at said source input; and

a plurality of high pass filters connected for receiving said signals from said amplifier, corresponding respectively to said plurality of signal ports, and adapted for providing low impedance coupling of said RF modulated signals to each one of said plurality of signal ports.

65. An apparatus as in claim 64 further comprising:

a plurality of low pass filters corresponding respectively to said plurality of signal ports, each one connected to a corresponding signal port, and to said means for coupling each signal port to each other signal port, and each one of said low pass filters adapted for preventing said RF modulated signals from being passed to said means for coupling each signal port to each other.

66. An apparatus as in claim 65 wherein said means for coupling each signal port to each other comprises a low frequency bus for carrying low frequency data and information band signals, and command and control band signals, and for coupling said data and

information band signals, and command and control band signals, to individual ones of said plurality of signal ports for being transmitted onto a network connectable to the apparatus.

67. An interface apparatus connectable to networked appliances distributed in selected locations and connected to a source of RF modulated signals through associated ones of a plurality of single conductor coaxial cable, comprising:

an RF modulator for transmitting said RF modulated signals and for generating an RF television channel on one of plural reserved spectrum channels from baseband audio and video signals receivable from an appliance to be associated therewith;

a processing circuit connected to said RF modulator for programming the modulator by sending bytes for initializing a picture carrier frequency, a sound subcarrier frequency and a video modulation depth; and

an impedance matching network connected between I/O ports connectable to an appliance and said processing circuit, for providing an impedance value to signals at a connection to an appliance which approximates the characteristic impedance provided by coaxial cable.

68. An interface apparatus as in claim 67 wherein said interface impedance matching network comprises:

a series resistor functionally connectable at first and second sides thereof to an appliance, and further connected at said second side through a shunt resistor to ground.

69. An interface apparatus as in claim 67 further comprising a digital signal frequency filter, an electrical command signal filter, and an RF modulated video signal frequency filter, each having a different bandpass frequency which encompass different operating signal frequency ranges of unmodulated digital signals, electrical command signals, and RF modulated signals and video signals respectively, said digital signal frequency filter interconnectable at first and second terminals thereof between I/O ports of an appliance and

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the coaxial cable, said electrical command frequency filter being interconnectable at first and second terminals thereof between an IR transceiver and the coaxial cable, and said RF modulated video signal frequency filter being interconnectable at first and second terminals thereof between signal I/O ports of an appliance and the coaxial cable, whereby each one of said filters serve to bidirectionally couple operating signals within their respective bandpass frequencies between an associated appliance and the coaxial cable.

70. An interface apparatus as in claim 68 wherein said series resistor is functionally connectable at the first and second sides thereof to said first terminal and through the RF modulator to the appliance I/O ports respectively, and said series resistor being further connectable at said second side through said shunt resistor to the low voltage potential reference of the appliance I/O ports which is ground. --
